

EXHIBIT 14

BLAST 2 SEQUENCES

This tool produces the alignment of two given sequences using **BLAST** engine for local alignment.

The stand-alone executable for blasting two sequences (bl2seq) can be retrieved from **NCBI ftp site**

Reference: Tatiana A. Tatusova, Thomas L. Madden (1999), "Blast 2 sequences - a new tool for comparing protein and nucleotide sequences", FEMS Microbiol Lett. 174:247-250

Program Matrix

Parameters used in **BLASTN** program only:

Reward for a match: Penalty for a mismatch:

☒ Use **Mega BLAST** Strand option

Open gap and extension gap penalties

gap x_dropoff expect word size Filter ☒

Sequence 1 Enter accession or GI or download from file

or sequence in FASTA format from: to:

```
DTGNSFYESTULTRALSSQFMLSISEASLNQLKSDULDFSGNLNVPFYGWQGLWSGWAKTU  
DPEPASSATITDPKANKRFHRTLLLTWLPAGYVPSPKHRSPLIANTLWGNMLLATESLKNS  
AELTPSDHPPFWGITGGGLGMMVYQEPRENHPGFHMRSSGYFAGMIAGQTHTFSLKFSQTYT  
KLNERYAKNNVSSKNYSQGEMLFSLQEGFLLAKLVGLYSYGDHNCHEHYTQGENLTSQGT  
FRSQTMGGAVFFDLPMKPFGSTHILTAPFLGALGIYSSLSHFTEVGAYPRSPSTKTPLINV  
LVPIGVKGSFMNATQRPQAWTVELAYQPVLYRQELEIATQLLASKGIWFGSGSPSSRHAMS  
YKISQQTQPLSWLTLHFQYHGFYSSSTFCNYLNGEIALRF.
```

Sequence 2 Enter accession or GI or download from file

or sequence in FASTA format from: to:

```
cttwcqaism rmgyygdrvr orviktavnk eremgeaiag asgnttstis  
klvertnpay gkhmqdaemf tnaacmtlni wdrfdvfct1 gatsgylkgn  
sasfnlvglf gdgvnatkpa adsignvqln qsvveltydt tawsvgara  
alwecgcatt1 gasfyaqsk pkieelnvlc naaeftinkp kgyvgkefpl  
dltagttaat gtdasidyh ewqaslsly rlnmftpyig vkwsrasfds  
dtiriaqprl vtpvvdittl nptiagcgsv agantegqis dtmqivslql  
nkmksrkscg iavgttivda dkyavtvetr lideraahvn aqfrf
```

Comments and suggestions to blast-help@ncbi.nlm.nih.gov



Blast 2 Sequences results

BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.3 [Apr-24-2002]

Matrix: **BLOSUM62** gap open: **11** gap extension: **1**

x_dropoff: **50** expect: **10.0** wordsize: **3** Filter: ☒ **Low-complexity**

Sequence 1 lcl|seq_1 Length 955 **PMPE PTA-2462**

Sequence 2 lcl|seq_2 Length 394 **MMMA**

No significant similarity was found

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Open gap and extension gap penalties

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Sequence 1 Enter accession or GI or download from file

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```
ALSSQPLSLISSEASUNLQKRSULMDFSGNLNVPRIWQGLWIGWARTQDPEFASATITUMQ
KANRFHRTLTLTWLPAGYVPSPKHRSPLIANTLWGNMLLATESLKNSELTTPSDHPFWGIT
GGGLGMMVYQDPRENHPGFHMRSSGYSAGMIAGQTHFSLKFSQTYTKLNERYAKNNVSSK
NYSQCGEMFLSLQEGFLLTKLVGLYSYGDHCHHFYTGQENLTSQGTFRSQTMGGAVFFDL
PMKPFGSTHILTAPFLGALGIYSSLSHFTEVGAYPRSFSTKTPLINVLVPIGVKGSFMMNAT
QRPOAWTVELAYQPVLYRQEPGIATQLLASKGIWFGSGSPSSRHAMSYKISQQTQPLSWLT
LHFQYHGFYSSSTFCNYLNGEIALRF
```

Sequence 2 Enter accession or GI or download from file

or sequence in FASTA format from: to:

```
cttwcqaism rmgyygarvr orviktavnk eremgeaiag asgnttctis
klvertnpay gkhmqdaemf tnaacmtlni wdrfdvftl gatsgylkgn
sasfnlvglf gdgvnatkpa adsipnvqln qsvveltydt tawsvgara
alwecgcatl gasfgyaask pkieelnvlc naaeflinkp kgyvgkefpl
dltagttaat gtkdasidyh ewqaslsly rlnmftpyig vkwsrasfds
dtiriaqprl vtpvvdittl nptiagcgsv agantegqis dtmqivslql
nkmskrkscg iavgttivda dkyavtvetr lideraahvn aqgrf
```

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Matrix: **BLOSUM62** gap open: **11** gap extension: **1**x_dropoff: **50** expect: **10.0** wordsize: **3** Filter ☒ **PSI-BLAST**Sequence 1 lcl|seq_1 Length 965 *SEA ID NO: 2*Sequence 2 lcl|seq_2 Length 394 *COMP*

No significant similarity was found